

Application Serial No.: 10/082,437
Amendment dated: 08/28/2004

Reply to Office action of: 05/28/2004
Attorney Docket No.: ARC920010022US1

REMARKS

Applicants respectfully submit that all the claims presently on file are in condition for allowance, which action is earnestly solicited.

THE SPECIFICATION

Applicants have amended the Abstract to correct a typographical error.

THE CLAIMS

Claims 1-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein et al. (USP 6,665,815 B1) in view of Beeler, Jr. (USP 5,974,563). Applicants respectfully submit that these cited references, whether considered individually or in combination with each other, do not disclose all the elements and limitations of the rejected claims. Consequently, the claims presently on file are not obvious in view of the cited references, and the allowance of these claims is earnestly solicited.

In support of this position, Applicants submit arguments in favor of allowance of the representative claim 1, which are outlined in the following table:

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ARGUMENTS OUTLINE

<u>Instant Claim</u>	<u>Rejection Grounds in Office Action</u>	<u>Applicants' Arguments</u>
1. A method for restoring a file system from one or more incremental backups in the presence of deletion, without restoring a deleted file, comprising the steps of: deleting a file;	As per claim 1, Goldstein discloses a method for restoring a file system from one or more incremental backups in the presence of deletion, without restoring a deleted file, comprising the steps of: Goldstein does not explicitly teach deleting a file and logging a file deletion in a deletion log.	(1) Goldstein does not disclose restoring a file system without restoring a deleted file.
logging a file deletion in a deletion log;		(2) Applicants agree that Goldstein does not describe the essential element of logging the file deletion in a deletion log.
updating metadata associated with the deleted file; and	updating metadata associated with the deleted file (mapping metadata, col. 4, lines 41-51); and	(3) Goldstein maps metadata for snapshots but not files.
using the deletion log and the metadata, re-deleting the deleted file that has been previously backed-up, upon a restore operation to an incremental backup, to allow accurate restore by removing the deleted file without comparing snap-shot images (fig. 10, precedent backup, col. 6-7).	using the deletion log and the metadata, re-deleting the deleted file that has been previously backed-up, upon a restore operation to an incremental backup, to allow accurate restore by removing the deleted file without comparing snap-shot images (fig. 10, precedent backup, col. 6-7).	(4) Goldstein cannot use a deletion log that is not created. (5) Goldstein does not re-delete deleted files. (6) The snapshots in Goldstein are compared

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		by a processing unit.
	<p>Goldstein does not explicitly teach deleting a file and logging a file deletion in a deletion log. However, Beeler teaches deleting a file and logging a file deletion in a deletion log (fig. 17, transaction log, maintain copies of deleted files on the target computer, col. 6, lines 55-58, col. 14, lines 23-25). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to provide the step when a file is deleted, logs the deleted file in a deletion logs because it allows a user to restore the deletion files to a specific location on the source computer (col. 6, lines 60-63).</p>	(7) The combination of the cited references teaches away from the present invention.

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A. Legal Standard of Obviousness

The following legal authorities set the general legal standards in support of Applicant's position of non obviousness, with emphasis added for added clarity:

- MPEP 706.02(j), **"To establish a prima facie case of obviousness, three basic criteria must be met.** First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaack, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) ... The initial burden is on the examiner to provide some **suggestion of the desirability** of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the **references must expressly or impliedly suggest the claimed invention** or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)."
- **In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is** not whether the differences themselves would have been obvious, but **whether the claimed invention as a whole would have been obvious.** The prior art perceived a need for mechanisms to dampen resonance, whereas the inventor eliminated the need for dampening via the one-piece gapless support structure. "Because that insight was contrary to the understandings and expectations of the art, the structure effectuating it would not have been obvious to those skilled in the art." 713 F.2d at 785, 218 USPQ at 700 (citations omitted).
- MPEP §2143.03, "All Claim Limitations Must Be Taught or Suggested: To establish prima facie obviousness of a claimed invention, **all the claim limitations must be taught or suggested by the prior art.** In re Royka, 490 F.2d

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981, 180 USPQ 580 (CCPA 1974). **"All words in a claim must be considered in judging the patentability of that claim against the prior art."** In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)."

- MPEP §2143.01, "The Prior Art Must Suggest The Desirability Of The Claimed Invention: There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (**The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held improper.**). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).
- **"Obviousness cannot be established** by combining the teachings of the prior art to produce the claimed invention, **absent some teaching or suggestion** supporting the combination." In re Fine, 837 F.2d at 1075, 5 USPQ2d at 1598 (citing ACS Hosp. Sys. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). **What a reference teaches** and whether it teaches toward or **away from the claimed invention** are questions of fact. See Raytheon Co. v. Roper Corp., 724 F.2d 951, 960-61, 220 USPQ 592, 599-600 (Fed. Cir. 1983), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984). "
- "When a rejection depends on a combination of prior art references, there must be **some teaching, suggestion, or motivation** to combine the references. See In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). **Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation** to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See MPEP 2143.01: In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).
- "With respect to core factual findings in a determination of patentability, however, the **Board cannot simply reach conclusions based on its own**

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understanding or experience -- or on its assessment of what would be basic knowledge or common sense. **Rather, the Board must point to some concrete evidence in the record** in support of these findings." See *In re Zurko*, 258 F.3d 1379 (Fed. Cir. 2001).

- "We have noted that **evidence of a suggestion, teaching, or motivation to combine** may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), *Para-Ordinance Mfg. v. SGS Imports Intern., Inc.*, 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," *Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, **the showing must be clear and particular**. See, e.g., *C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232. **Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence."** E.g., *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact."); *In re Sichert*, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977)." See *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999).
- "To prevent the use of hindsight based on the invention to defeat patentability of the invention, **this court requires the examiner to show a motivation to combine the references** that create the case of obviousness. In other words, **the examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references **for combination in the manner claimed**." See *In re Rouffet*, 149, F.3d 1350 (Fed. Cir. 1998).
- The mere fact that references can be combined or modified does not render the resultant combination obvious **unless the prior art also suggests the desirability of the combination**. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, **there must be a suggestion or motivation in the reference** to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). See also *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a

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ground surface of varying slope not suggested by combination of prior art references).

- If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

B. Brief Summary of the Present Invention

Prior to presenting substantive arguments in favor of the allowability of the claims on file, it might be desirable to summarize the present invention. The present invention describes a system and associated method (hereinafter referred to as "the present system") for restoring a file system from first-level incremental backups in the presence of deletion, without restoring deleted files.

More specifically, the present system implements an accurate disaster recovery (i.e., point in time restore of a file system) from file-level incremental backups in the presence of deletions. This is accomplished by logging the deletions in a deletion log. Using the deletion log, the system re-deletes the deleted files upon a restore operation to an incremental backup point-in-time epoch.

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C. Application of the Obviousness Standard to the Present Invention

The office action states that: "Goldstein discloses a method for restoring a file system from one or more incremental backups in the presence of deletion, without restoring a deleted file". Applicants submit that, to the best understanding of Applicants, Goldstein does not disclose restoring a file system without restoring a deleted file. The Examiner does not make reference to a text or figure in Goldstein that teaches the non-restoration of deleted files upon restoring the file system.

The office action states that: "Goldstein does not explicitly teach deleting a file and logging a file deletion in a deletion log." Applicants agree that Goldstein does not describe the essential element of logging the file deletion in a deletion log. The omission of this element represents, by itself, a significant departure from the teaching of the present invention that relies on this feature as a cornerstone of the present invention.

The office action states that Goldstein discloses: "updating metadata associated with the deleted file (mapping metadata, col. 4, lines 41-51)". Applicants respectfully submit that Goldstein maps metadata for snapshots but does not disclose mapping the files.

Column 4, lines 41-51 are reproduced below for ease of reference, and as an indication that there is no reference in the Goldstein excerpt below to the mapping of files.

"Once the first succedent backup 131 has been created, the first state snapshot 113 may be partially deleted, as indicated by dashed lines in FIG. 5, and the base state snapshot 111 may be fully deleted. By 'partial

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deletion` is meant that the mapping metadata for first state snapshot 113 is not deleted. With the deletion of the base state snapshot 111 and the partial deletion of the first state snapshot 113, it is possible to release blocks in the storage pool containing data unique to the base state snapshot 111 and the first state snapshot 113. In general, snapshots may be retained online for fast file recovery and/or deleted at a later time."

The office action states that Goldstein teaches: "using the deletion log and the metadata, re-deleting the deleted file that has been previously backed-up, upon a restore operation to an incremental backup, to allow accurate restore by removing the deleted file without comparing snap-shot images (fig. 10, precedent backup, col. 6-7)."

Applicants respectfully submit that this position is irreconcilable with the Examiner's prior admission that "Goldstein does not explicitly teach deleting a file and logging a file deletion in a deletion log." In essence, Goldstein cannot use a deletion log that was not created.

Applicants further submit that there is no indication that Goldstein teaches re-deleting the deleted files, particularly in view of Examiner's admission that "Goldstein does not explicitly teach deleting a file and logging a file deletion in a deletion log."

Claim 1 recites the following feature which is reproduced herein in part: "accurate restore by removing the deleted file without comparing snap-shot images." Emphasis added. However, as Goldstein makes it abundantly clear, the snapshots 57 are compared by a processing unit 53. As a result, this feature of claim 1 is also missing from Goldstein.

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The Examiner resorts to Beeler in order to substitute for some of the missing elements of the main reference, i.e., Goldstein. Applicants respectfully submit that Beeler stores the deleted files so that they could be restored upon request by the user, as indicated by the excerpt below from Beeler:

"Another feature of this invention is the means by which to maintain copies of deleted files on the target computer, and to restore these files to the source server if requested by the user. Based on user configuration, copies of deleted files may be stored under unique names on the target server. Means are provided to display all such files to the user, and to allow the user to restore one or more of these files to a specific location on the source computer. This feature can be configured to maintain deleted files on the target computer until they are explicitly purged by the user, or after a certain period of inactivity." Emphasis added. Column 6, lines 55-65.

As a result, Beeler teaches away from the present invention, and the combination of Goldstein and Beeler is not permissible. In addition, neither Goldstein nor Beeler discloses the missing elements/limitations of claim 1, or provides some suggestion of the desirability of the combination proposed by the office action.

Independent claims 11 and 19 are also allowable for reciting generally similar elements and limitations to those of claim 1. As a result, claims 1, 11, and 19 and the claims dependent thereon are allowable and such allowance is respectfully requested.

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CONCLUSION

All the claims presently on file in the present application are in condition for immediate allowance, and such action is respectfully requested. If it is felt for any reason that direct communication would serve to advance prosecution of this case to finality, the Examiner is invited to call the undersigned at the below-listed telephone number.

Respectfully submitted,

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